

15(0)

SOV/20-122-2-16/42

AUTHORS: Oding, I. A., Corresponding Member, Academy of Sciences, USSR,
Geminov, V. H.

TITLE: A New Law of Lasting Resistance (Novaya zakonozernost' dlitel'-
noy prochnosti)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 122, Nr 2, pp 222-225
(USSR)

ABSTRACT: Some previous papers (Refs 1 - 6) proved that the lasting
resistance cannot be described by an exponential law, and
they suggested the exponential law $t = A'e^{-\alpha' \sigma}$.
Some of these papers (Refs 3 - 6) pointed out that the validi-
ty of the exponential law is only an approximate one, and
that it may be applied only for $\alpha' \sigma > 1.6$. In 2 papers (Refs 5,
6) the equation $t = A / \sigma \cdot \beta \sigma$ was deduced; t denotes the
duration of the strain, σ - the tension; α' , α , β' , β , A' , B ,
 A - coefficients. If a metal is used under tension, vacancies
produced by moving dislocations are accumulated, and they
subsequently coagulate to micropores and microcracks, which
finally cause the rupture of the metal. But according to

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a more exact experimental and theoretical analysis of the experimental data, the equation $t = A/sh\delta\sigma.sh\beta\sigma$ gives too low values of the life time of the metal. This equation describes only the accumulation of the vacancies. The most favorable spaces for the gathering of vacancy colonies are those metal volumes which are placed on the surface of the samples. The boundaries of the grains and of the blocks, the slide planes, the boundaries of the twins, and also the surfaces of the micro-pores and of the microcracks belong to these surfaces. The surfaces of the secondary phases (phases of aging (stareniye)), the gaseous occlusions, and the non-metallic inclusions have to be treated as separating surfaces. In all these places, the highest values and gradients of the tensions, and therefore an accumulation and a deposition of the vacancies must be expected. Simultaneously with the accumulation of the scattered vacancies and with the increase of the dimensions of their colonies, there is a decrease of their dimensions caused by the annihilation of the vacancies which collide with straying atoms. Because of these and other facts, the equation $t = A/sha\sigma.sh\beta\sigma$ must be replaced by the equation $t^m = A_1/sh[a(\sigma-k/\sigma)] .sh\beta\sigma$. However, this

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equation is too complicated for practical use. But it can be

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essentially simplified by replacing the individual parts of the corresponding curve by simpler expressions, (i.e. by replacing the continuous curve by a curve composed of several parts). The carrying out of this operation is discussed. The analysis of 130 curves of lasting resistance (which were collected from the literature) confirm the correctness of the suggested expressions. The dependence of the lasting resistance for durations of use (srok sluzhby) up to 100 000 hours in the coordinates $\sigma - \lg t$ may be represented either by a single straight line or by 2 parts of straight lines of different inclination. The basis of the alloy must be the essential characteristic of this alloy. There are 4 figures and 15 references, 5 of which are Soviet.

SUBMITTED: June 5, 1958

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GEMINOV, V. N. Cand Tech Sci -- (diss) "Search for means of reducing the length of durable-strength tests." Mos, 1969. 28 pp with graphs; 1 sheet of tables (Acad Sci USSR. Inst of Metallurgy in A. Ä. Baykov), 150 copies. Printed by duplicating machine (KL, 45-59, 146)

GEMINAX, V.N.

18(7) PHASE I BOOK EXPLOITATION SOV/3355
Akademiyi nauk SSSR. Institut metallurgii. Nauchnyy sovet po
probleme sharprochnykh splavov
Isledovaniya po sharprochnym splavam, t. IV (Studies on Heat-Resistant Alloys, vol. 4). Moscow, 1959. 152 pp. 152 pp. 100 p.
Errata slip inserted. 2,200 copies printed.

Ed. of Publishing House: V. A. Klishov; Tech. Ed.: A. P. Qusev;
Editorial Board: I. P. Bardin, Academician; G. V. Kurdyumov,
Academician; M. V. Agayev; Corresponding Member, USSR Academy of
Sciences; I. A. Odintsov, I. M. Pavlov, and I. P. Zudin, Candidate
of Technical Sciences.

PURPOSE: This book is intended for metallurgists concerned with
the structural metallurgy of alloys.

COVERAGE: This is a collection of specialized studies of various
problems in the structural metallurgy of heat-resistant alloys.
Some are concerned with theoretical principles, some with descriptions
of new equipment and methods, others with properties
of specific materials. Various phenomena occurring under
specified conditions are studied and reported on. Particulate,
see Table of Contents. The articles are accompanied by a number
of references. Math. Statist. and non-Statist.

Studies (Cont.)

SOV/3355

- Zakharova, M. I., M. N. Ignatova, L. N. Semenov, and
B. A. Khatanova. Investigation of Phase Transformations
in Iron-Vanadium and Iron-Chromium Alloys 263
- Zudin, I. P., and O. A. Ramykh. Effect of Chromium,
Molybdenum, and Tungsten on the Time and Temperature Dependence
of the Hot Hardness of Ferrite 266
- X Ramykh, O. A., and I. P. Zudin. High Temperature Creep
Strength of Complex Alloys of Ferrite with Chromium,
Vanadium, Tungsten, and Molybdenum 273
- Prigodnikov, M. V. Some Problems in the Theory of Heat
Resistance 290n
- Odintsov, I. A., and V. M. Gerasimov. New Method of Extrapolating
Long-Term Strength Properties from Short-Term Endurance
Test Data 287
- Stanyukovich, A. V. Investigation of Plasticity Properties
Card 9/12

GEMINOV, V N.

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PHASE I BOOK EXPLOITATION SOV/2836

Oding, Ivan Avgustovich, Vera Semenovna Ivanova, Vladislav Vasil'yevich Burdukskiy, and Vladimir Nikolayevich Geminov

Teoriya polzuchesti i dlitel'noy prochnosti metallov (Theory of Creep and Long-Time Strength of Metals) Moscow, Metallurgizdat, 1959. 488 p. Errata slip inserted. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR, Nauchnoy i tekhnicheskoy informatsii. Otdel tekhnicheskoy informatsii.

Ed. (Title page): I.A. Oding, Corresponding Member, USSR Academy of Sciences; Ed. (Inside book): G.V. Popova; Ed. of Publishing House: Ye.N. Berlin; Tech. Ed.: Ye. B. Vaynshteyn.

PURPOSE: This book is intended for scientific and engineering workers in the field of heat-resistant metals and alloys. It may also be useful to students at higher metallurgical and machine-building institutions.

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Theory (Cont.)

SOV/2836

COVERAGE: The book contains recent information on the basic laws and mechanism of creep, relaxation and durability of metals. Special attention has been given to the processes which cause creep and relaxation and also to those which result in breakdown of metals. The authors approach the problem of heat resistance on the basis of the contemporary theory of imperfections in real crystals. They describe all processes from the point of view of the theory of displacement and vacant places in the crystal space lattices. Academician G.V. Kurdyumov, and Professor II. Kornilov are mentioned as having developed other investigative techniques in this field. Separate chapters of the book were written by: Ch. I by I.A. Oding and V.N. Geminov; Ch. II by I.A. Oding; Ch. III by I.A. Oding and V.S. Ivanova; Ch. IV by I.A. Oding and G.A. Tulyakov; Ch. V and Ch. VI by V.S. Ivanova; Ch. VII, VIII, and IX by I. A. Oding and V.V. Burdukskiy; Ch. X by V.N. Geminov. The authors thank Professor I.I. Kornilov and N.V. Grnm-Grzhimaylo, Doctor of Chemical Sciences. He also thanks laboratory workers: L.K. Gordiyenko, Yu.P. Liberov, Z.G. Fridman, T.S. Mar'yanovskaya, and S.Ye.

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23(5)

SOV/26-59-2-34/53

AUTHOR:

Geminov, V.N.

TITLE:

Films of a Thickness of 0.02 Micron (Plenki tol-shchinoy 0,02 mikrona)

PERIODICAL:

Priroda, 1959, Nr 2, pp 107-108 (USSR)

ABSTRACT:

A summary of an article from the American magazine "Technical Engineering News" Nr 6, 1958.

ASSOCIATION:

Institut metallurgii im. A.A. Baykova Adademii nauk SSSR. Moskva (Institute of Metallurgy imeni A.A. Baykov of the USSR Academy of Sciences - Moscow)

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25(1)

SOV/148-59-2-20/24

AUTHOR: Geminov, V.N., Engineer

TITLE: On the Method of Determining the Strength Reserve Factor (K vo-
prosu o metode opredeleniy: koeffitsiyenta zapasa prochnosti)

PERIODICAL: Izvestiya vysshikh uchebnykh zavadeniy, Chernaya metallurgiya
1959, Nr 2, pp 153-156 (USSR)

ABSTRACT: The author discusses an article published by V.M. Grebenik on
"Methods to Consider Various Factors in Computations of Strength"
in this journal Nr 7, for 1958. Grebenik stresses the necessity
to find additional strength reserves of materials by reducing
the general factor of the strength reserve. He rejects the
method of differential computation developed by I.A. Oding. The
author of the present article states that the theory developed
by Grebenik does not contain any new concrete data applicable
in machine design. Therefore the differential computation method
suggested by Oding remains the guiding principle in the designing
practice.

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There are 2 Soviet references.

SOV/248-59-2-20/24

On the Method of Determining the Strength Reserve Factor

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy of AS
USSR)

SUBMITTED: January 6, 1959

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SOV/180-59-4-12/48

AUTHORS: Geminov, V.N. and Oding, I.A. (Moscow)

TITLE: On the Accuracy of Parametric Relations in Endurance Strength

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 4, pp 73-76 (USSR)

ABSTRACT: The relation between the service life and the stress and the temperature is the parametric relation considered. Most test data are obtained at constant temperature (service life-stress relation) or at constant stress (service life-temperature relation). The full parametric relation can be checked only against these experimentally obtained partial relations. The stress relation (at constant temperature) has been shown by the present authors (Doklady AN SSSR, 1958, Vol 122, Nr 2) to yield in semi-logarithmic coordinates an S shaped curve. The first shallow range reaches from several minutes to several dozens of hours and its general laws are unknown. The second (steep) and third (shallow) regions can, in practice, be replaced by straight lines (plotting stress against the logarithm of service life). The change from the second to the third ranges and the ratio of the

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On the Accuracy of Parametric Relations in Endurance Strength

slopes obey certain laws. For an extrapolation to service lives of 100000 hours the range between 100 and 1000 hours has been recommended as a starting base. The stress plot for the same material has different slopes at different temperatures. The lines have no common intersection point. The widely used power law is untrue and impractical. The relation of the logarithm of service life against the temperature is linear. Theoretically, the plot should be drawn against the reciprocal of temperature. In practice, the relative temperature interval is not large and the manner of plotting unimportant. Seven general parametric relations are considered. Of these, the most accurate are those of Manson and Hafferd and of Zhurkov. Every three-dimensional parametric relation hitherto adopted rests on the assumption of the uniformity of the stress and temperature relation throughout the range of investigation. This assumption is untrue and large errors are caused in extrapolation. The authors advise against the use of any

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SOV/180-59-4-12/48

On the Accuracy of Parametric Relations in Endurance Strength
parametric relation at present. There are 4 references,
2 of which are Soviet, 1 German and 1 English.

SUBMITTED: April 6, 1959

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ODING, I.A.; GEMINOV, V.N.

New method of extrapolating data from short-time tests for
durable strength and long terms of service. Issl.p.o sharopr.
splay. 4:287-297 '59. (MIRA 13:5)
(Metals--Testing)

16(2), 14

AUTHOR:

Geminov, V. H.

SOV/32-25-1-34/51

TITLE:

On the Statistic Evaluation of Experimental Data According to the Strength (O statisticheskoy obrabotke eksperimental'nykh dannykh po dlitel'noy prochnosti)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 1, pp 90-95 (USSR)

ABSTRACT:

The three most important problems of the evaluation under review have not yet been investigated sufficiently. The questions refer to: 1. The plotting of the medium (most probable) functional straight line; 2. determination of the extension of the reliability range (doveritel'nyy interval) within the experimental part of durability curves (with regard to the influence of the number of experimental points); 3. determination of the quantity of extension of the reliability range on extrapolation beyond the range of the experimental part. These three problems are dealt with in the present paper with respect to certain prerequisites. The author arrived at the following conclusions: the extension of the reliability range is, according to date on a finite number of experimental points, larger than that of an "ideal" reliability range which is obtained in the case of an infinite

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On the Statistic Evaluation of Experimental Data
According to the Strength

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number of points. The extension of the reliability range increases on extrapolation, decreases on increase of the number of experimental points and decreases most strongly down to a sample number of 15. The experimental points within the range investigated can be distributed equally or in groups, with a few points on each level. In the case of one sample, for instance, it is possible to investigate the durability on 12-15 levels of stress, whereas 5-6 levels can be investigated if there are 2-3 samples available. 91 samples of EYa2 steel were destroyed to investigate the distribution of durability deviations. There are 3 figures and 6 references, 3 of which are Soviet.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR
(Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences, USSR)

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18(7)

SOV/26-59-5-19/47

AUTHOR: Geminov, V.N.

TITLE: Direct Observation of Dislocations in Metals

PERIODICAL: Priroda, 1959, ⁴⁹Nr 5, pp 84 - 86 (USSR)

ABSTRACT: The author states that the strength of the crystalline material depends upon the presence, in its lattice, of areas with a distorted structure, called structural imperfections or dislocations. Their detection has an important practical as well as scientific value. For a long time the only detectable signs of their presence were surface spots. In 1956, an English scientist, Menter, succeeded in detecting such dislocation of crystals in metals (phthalocyanides of platinum and copper) by means of an electron microscope. The dislocations formed by molecules are about 10 times the size of dislocations formed by atoms of

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Direct Observation of Dislocations in Metals

metallic lattices. The latter can be detected by other methods, described by the author, such as the emission microscope. There are 2 photographs, and 3 references 2 of which are Soviet and 1 English.

ASSOCIATION: Institut metallurgii Akademii nauk SSSR / Moskva
(Metallurgical Institute of the Academy of Science
of the USSR / Moscow)

Card 2/2

ODING, I.A.; GEMINOV, V.N.

Professor A.H. Cottrell's lectures. Metalloved. 1 term, obr. met.
no.5:46-49 My. '61.. (MIRA 14:5)
(Dislocations in metals)

10.9230 also 3,515, 4016, 1418

22537
S/096/61/000/006/004/006
E193/E183

AUTHOR: Geminov, V.N., Candidate of Technical Sciences
TITLE: Some problems of determining the strength of metals under conditions of prolonged loading
PERIODICAL: Teploenergetika, 1961, No.6, pp. 51-56

TEXT: The number of applications in which metal components have to operate for periods ranging up to 50000-100000 h, or even longer, has enormously increased in recent years. Consequently, the problem has arisen of determining the so-called long-term strength of metals, i.e. the maximum stress, σ , which can be applied to a metal for a given period of time, t , without causing fracture. Since experimental determination of σ corresponding to very large t is not a practical proposition, the usual practice is to carry out a series of short-time tests and to find the magnitude of σ for any given t by extrapolation. According to one school of thought, the relationship between σ and t is described by $t = B\sigma^{-\beta}$, this function being represented by a straight line if plotted in the $\log t / \log \sigma$ coordinates. If, therefore, the results of short-term tests are plotted in these
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S/096/61/000/006/004/006

Some problems of determining the strength σ E193/E183
coordinates, the magnitude of σ for any t can readily be found by extrapolation. In some cases, fairly accurate results are obtained by this method. Very often, however, the experimentally determined graph $\log t/\log \sigma$ consists of two or three linear branches whose slope increases with increasing t . This means that if the experimental points happen to coincide with only the first branch of such a graph, its extrapolation may give over-estimated values of σ . According to another school of thought, the relationship between σ and t constitutes an exponential function $t = A \exp - \gamma \sigma$ which is represented by a straight line, when plotted in the $\sigma/\log t$ coordinates. In fact, experimental results plotted in these coordinates form a straight line over a much wider range of t than when plotted in the $\log t/\log \sigma$ coordinates. At very large t , however, the slope of the $\sigma/\log t$ graphs also tends to change. In this case the slope decreases with increasing t which means that extrapolation of experimental $\sigma/\log t$ graphs, constructed on the basis of short-term tests, may give under-estimated values of σ . According to the present author, the inadequacy of both the above methods is due to the fact that the equations on which they are based have been

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Some Problems of determining the

formulated on the assumption that the behaviour of metals under prolonged loads is governed by one process only, namely the process of gradual weakening of the metal, brought about by the accumulation of defects. It has been shown, however, that side by side with the formation and accumulation of defects, a counteracting process consisting in healing of the defects may take place (Refs. 2, 8, 9). The gradual disintegration of a metal subjected to prolonged loading is associated with the process of piling up of vacancies which later merge to form microcracks; the rate of this process is proportional to the rate of deformation and consequently to the applied stress. The counteracting process of healing of the defects consists in the piled-up vacancies becoming occupied by the neighbouring atoms; the intensity of this process does not depend on the magnitude of the applied stress, but the longer the time of loading the higher becomes the probability of a vacancy being occupied by one of the adjacent atoms. An equation describing the relationship between σ and t , which takes into account both these processes, is too complex to be used in practical applications. However, a simplified, and yet sufficiently accurate, form of this equation has been found

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Some problems of determining the E193/E183

(Refs. 2, 8, 9) which is graphically represented by two exponential branches, such as are shown in Fig.1. From the practical point of view, the most important properties of the function, represented by the graph in Fig.1, consist in the following: (1) the ratio of the slopes of the two linear branches of the graph is constant for all alloys based on a given metal or solid solution; (2) the position of the deflection point is unequivocally determined by the slope of the first branch of the graph. This means that if a short portion of the first branch of the graph is experimentally determined, the complete graph can be easily constructed. This is done in the following manner. (1) A portion of the first branch of the $\sigma/\log t$ graph is constructed from experimental data, obtained for the time interval of approximately 100 to 1500 hours. (2) The coefficient γ_1 in the equation $t = A \exp - \gamma_1 \sigma$ is calculated, the calculation being based on purely geometrical considerations; thus $\gamma_1 = (2.3 \log t_2/t_1)/(\sigma_1 - \sigma_2)$, where σ_1 , σ_2 , t_1 and t_2 denote stresses and times corresponding to any two points of the experimental graph (preferably chosen so as to obtain $\log t_2/t_1 = 1$ or 2). (3) The critical stress

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E193/E183

Some problems of determining the

(σ_K , see Fig.1) corresponding to the deflection point is calculated: for steels $\sigma_K = 2/\gamma_1$; for alloys of the Nimonic type $\sigma_K = 2.5/\gamma_1$; (the numerical coefficients for calculating σ_K of other alloys are yet unknown). (4) The experimental graph (straight line) is extrapolated to the point corresponding to σ_K . (5) The slope γ_2 of the second branch of the graph is found: for steels $\gamma_2 = 4\gamma_1$ (i.e. the slope of the second branch is four times smaller than that of the first branch); for Nimonics $\gamma_2 = 2\gamma_1$. (6) The second branch of the graph is drawn. The validity of this method has been checked on approximately 140 $\sigma/\log t$ graphs, constructed on the basis of published experimental data. Typical results of this comparison are shown in Fig.2a, where σ of several steels is plotted against $\log t$. The experimental results are shown by points. The continuous lines are the branches of the graphs drawn on the basis of the experimental data; the broken lines represent the portions of the graphs obtained by the method proposed by the present author. Curves 1-7 relate to steels of the following compositions; (1) 0.13%Cr, 1.8 Mo, 1.6 W, Nb/Ta; tested at 500 °C; $\gamma_1 = 0.15$. (2) 0.25% Cr, 0.8 Mo, 0.3 V, 0.2 C; tested at 530 °C; $\gamma_1 = 0.11$. (3) 17% Cr, 2.2 Mo, 12 Ni, 0.6 Nb/Ta; Card 5/7

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Some problems of determining the E193/E183

tested at 700 °C; $\gamma_1 = 0.38$. (4) 0.8% Cr, 0.56 Mo; tested at
500 °C; $\gamma_1 = 1.65$. (5) 2.3% Cr, 1.1 Mo, 0.1 C, Ni, V; tested
at 550 °C; $\gamma_1 = 0.11$. (6) 1.3% Cr, 0.5 Mo, 0.1 C; tested at
550 °C; $\gamma_1 = 0.27$. (7) 0.22% C; tested at 510 °C, $\gamma_1 = 0.6$.
In the final paragraphs of the present paper the problem of the
safety factor is discussed. Owing to the wide scatter of the
experimental results the $\sigma/\log t$ curve, based on the average
values of σ obtained in several tests, should not be used for
calculating the safe service loads. A "scatter band" should be
constructed on the basis of statistical treatments of experimental
data, and the service loads should be calculated on the basis of
the lower boundary of this band. A nomogram is provided with the
aid of which the width of the "scatter band" can be determined.
There are 3 figures and 10 Soviet references.

ASSOCIATION: Institut metallurgii AN SSSR
(Institute of Metallurgy, AS USSR)

Card 6/7

GEMINOV, V.N.

Maximum solubility in binary systems. [from "Aluminum," no.12, 1960]. Metalloved. i term. obr. met. no.7:61-62 JI '61.

(MIRA 14:6)

(Solubility)
(Aluminum-iron alloys)

GEMINOV, V.N.; KOP'YEV, I.M.

Causes of the high strength of thin metallic threads. Zav.lab. 27
no.3:334-335 '61. (MIRA 14:3)

1. Institut metallurgii im. A.A. Baykova Adademii nauk SSSR.
(Metals—Testing)

GEMINOV, V.N.; KOP'YEV, I.M.

Strength of fine metal filaments. Trudy Inst.met. no.10:202-208
'62. (MIRA 15:8)
(Metal crystals--Defects)

S/032/62/028/011/012/015
B104/B102

AUTHOR: Geminov, V. N.

TITLE: Creep testing of specimens by the chain method

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 11, 1962, 1372 - 1374

TEXT: In creep tests and long-period tensile tests at elevated temperatures on specimens arranged in chains, the specimens are unloaded and cooled down to room temperature at certain intervals. In the first case, this is done at predetermined intervals, in the second when a specimen fractures. The periodic releases and coolings constitute an essential difference from tests made on single specimens, for the shock waves propagating through the other specimens when one of them fractures do not occur in tests on single specimens. The effects of these interruptions on the results obtained were examined in 1X18H9T (1Kh18N9T) austenitic steel. The interruptions of load were made at the beginning and the end of the second creeping stage and reloading was performed gently. The results imply that short-period interruptions have no effect on the creep strength of the material. In practice, however, more than two interruptions are made, loading is apt to be applied less gently, and shock
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Creep testing of specimens by the chain method B104/B102

waves occur in the specimens; these compress the material of the specimens and disturb the deformation. There are 3 figures and 1 table.

ASSOCIATION: Institut metallurgii im. A. A. Baykova (Institute of Metallurgy imeni A. A. Baykov)

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S/020/62/143/004/015/027
B104/B102

AUTHORS: Oding, I. A., Corresponding Member AS USSR, and Geminov, V.N.

TITLE: The relation between the dislocation distribution in the activation energy levels and the amount of deformation

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 4, 1962, 836 - 839

TEXT: In previous papers I. A. Oding (Sborn. Issledovaniya po metallovedeniyu, M.-L., 1932; Prochnost' metallov, M.-L., 1936) has proposed the

empirical relation $\delta = A \frac{B^{\sigma} - 1}{B - 1}$ between true deformation δ and true tension σ , where A is the plasticity factor, B the deformation factor. By assuming a power-law distribution $N = N_0 \exp\{\alpha(\sigma - \sigma_0)\}$ of the dislocations in a crystal, a deformation equation is derived which is well confirmed by experiments. σ_0 is the minimum dislocation activation tension, N_0 the number of dislocations corresponding to σ_0 . From the experimentally proved linear dependence of the density of trapped dislocations from de-
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The relation between the ...

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B104/B102

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formation, the authors conclude that activated dislocations and trapped dislocations are related by a constant factor which is probably unit. Result: the trapped dislocations have a power-law distribution over the activation levels. There is 1 figure.

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ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR
(Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences USSR)

SUBMITTED: December 29, 1961

Card 2/2

GEMINOV, V.N.

Processing of experimental data on stress-rupture strength. Issl. po
zharoproch. splav. 10:113-116 '63. (MIRA 17:2)

GEMINOV, V.N.; TRUNIN, I.I.; TARKHANOV, G.V.; BORZDYKA, A.M.; AYVAZIAN, S.A.

Discussion concerning the interpretation of the results of testing of the stress-rupture strength of a metal of several smeltings.
Zav.lab. 29 no.7:827-837 '63. (MIRA 16:8)

1. Institut metallurgii im. A.A.Baykova (for Geminov). 2. Tsentral'nyy nauchno-issledovatel'skiy i proyektnyy institut tekhnologii i mashinostroyeniya (for Trunin, Tarkhanov). 3. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I.P.Bardina (for Borzdyka). 4. Matematicheskiy institut im. V.A.Steklova AN SSSR (for Ayvazyan).

(Metals--Testing)

L 23352-65 EWP(w)/EWT(m)/EWA(d)/T/EWP(t)/EWP(b) JH/MLK
ACCESSION NR: AT4046820 S/0000/64/000/000/0079/0082

AUTHOR: Odling, I. A. (Deceased) (Corresponding member AN SSSR); Gerninov, V. N. B41

TITLE: The theory of damage during creep

SOURCE: AN SSSR. Nauchnyy sovet po probleme zharoprochnykh splavov. Issledovaniya staloy i splavov (Studies on steels and alloys). Moscow, Izd-vo Nauka, 1964, 79-82

TOPIC TAGS: creep, proportionality coefficient, steel alloy, alloy hardening, crystal vacancy, structure dislocation

ABSTRACT: The total durability of metals under variable loads in creep conditions was studied for a series of alloys. The derivation of the formulas used to determine this factor is given in stepwise detail. The empirical coefficient z in these formulas is determined by the dependence of z on $\Delta\sigma = \sigma_2 - \sigma_1$ during overloading; in the coordinates $\lg z - \Delta\sigma$ these points lie on a straight line. With $\sigma_1 > \sigma_2$, the value of z is > 1 , and with $\sigma_1 < \sigma_2$, z is < 1 . A comparison of experimental and theoretical data for the accumulation of damage during single overloading for a number of alloys is shown. In all of the investigated cases, the theoretical values of z at $\Delta\sigma < 0$, i. e., during the transfer from the greater to the smaller tensions, agree with the experimental data or exceed them. With $\Delta\sigma > 0$, i. e., during the transfer from smaller to greater tensions,

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L 23352-65

ACCESSION NR: AT4046820

a relative hardening of the metal is observed in certain cases, and the theoretical values of z are higher than the experimental ones. In other cases, either a relative softening is observed, and the theoretical values of z are lower than the experimental, or the experimental and the theoretical values agree. Orig. art. has: 2 figures and 7 formulas.

ASSOCIATION: none

SUBMITTED: 16Jun64

ENCL: 00

SUB CODE: MM

NO REF SOV: 003

OTHER: 000

Card 2/2

L 27233-66 (11) EWT(m)/T/EWP(w)/EWP(t) IJP(c) JD

ACC NR: AM6003228

Monograph

40
37 UR/
BL

Ivanova, V. S.; Gorodiyenko, L. K.; Geminov, V. N.; Zubarev, P. V.; Fridman, Z. G.;
Liberov, Yu. P.; Terent'yev, V. F.; Vorob'yev, N. A.; Kudryashov, V. G.

18
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18
Role of dislocation in the strengthening and failure of metals (Rol'dislokatsii v uprochnenii i razrushenii metallov) Moscow, Izd-vo "Nauka", 1965. 179 p. illus., biblio. Errata slip inserted. 4500 copies printed.

TOPIC TAGS: metal, alloy, metal strength, alloy strength, dislocation, dislocation theory, thermomechanical treatment, metal failure

PURPOSE AND COVERAGE: The book is a continuation and development of the ideas of the late Professor I. A. Odintsov on the theory of dislocations. This theory served as the basis for the elaboration of new methods of strengthening metals and alloys. In the first part (Chap. I-IV) of this monograph the role of dislocations in the development of plastic deformation and the generation of flaws is discussed. In the second part (Chap. V-VII), the theoretical premises for metal and alloy strengthening with thermomechanical treatment and the effect of this treatment on the mechanical properties of metals and alloys under static and cyclic loads are reviewed.

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ACCNR: AM6003228

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Ch. I. Regularities of slopping and strengthening on the different grades of deformation -- 7

Ch. II. Formation of submicroscopic flaws during deformation as a result of multiplication of and interaction between defects of the crystal lattice -- 29

Ch. III. Effect of grain size, temperature, and deformation rate on the characteristics of metal fluidity -- 46

Ch. IV. Mechanism of brittle rupture and regularities in the defectibility of metals during creep 73

Ch. V. Basic premises for the development of methods of material strengthening by means of thermomechanical treatment 103

Ch. VI. Effect of basic technological factors on the effect of strengthening in thermomechanical treatment -- 119

Ch. VII. Increase of cyclic strength under combined thermomechanical treatment -- 148

References -- 170

SUB CODE: 11/ SUBM DATE: 06Aug65/ ORIG REF: 180/ OTH REF: 238/

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L 40043-66 EWP(k)/EWT(d)/EWT(m)/EWP(h)/T/EWP(1)/EWP(w)/EWP(v)/EWP(t)/ETI IJRC)
ACC NR: AP6016584 (A,N) RH/JD/HW SOURCE CODE: UR/0129/66/000/005/0014/0017

AUTHORS: Gordiyenko, L. K.; Geminov, Y. N.; Fridman, Z. G.; Vasil'chenko, G. S.; Rybovalov, Yu. P. 65 B

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii); TsNIIT KASH

TITLE: Raising the creep resistance of steel of the martensite-ferrite class by methods of mechanical thermal processing

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 5, 1966, 14-17

TOPIC TAGS: metallography, ~~metallurgical processes~~, creep, metal deformation, martensite steel, ferrite steel, deformation testing machine / IP-2 deformation testing machine, IP-5 deformation testing machine, IM-4R deformation testing machine, 1Kh12V2MF martensite steel

ABSTRACT: Research was conducted for the purpose of finding effective combinations for strengthening steel 1Kh12V2MF. This steel was used in the preparation of tubular disks and was worked at a temperature of 550C. Several thermomechanical processes were used in preparing the specimens for testing. The processes were treated as parametric cases for the strength-creep measurements. Among the testing equipment were machines IP-2, IP-5, and IM-4R. Several effects were measured, including the effect of the degree of deformation on the strengthening for several methods of thermomechanical processing, the creep rate at constant stress, and temperature for

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ACC NR: AP6016584

different processes, and the increase in creep stability obtainable through the use of optimal thermomechanical processes. It was found that optimal processing can reduce the creep rate by as much as 80% over the rate which characterizes the unstrengthened material. The steps involved in the recommended optimal process are sequentially summarized. Orig. art. has: 3 tables and 2 figures.

SUB CODE: 11/3/SUBM DATE: none/ ORIG REF: 004

Card

2/2

gd

USOVSKIY, B.N.; GEMINOVA, N.Y.; KRASNOSEL'SKAYA, T.A.[deceased]; LEPESHIN-
SKAYA, Ye.V., redaktor; TUMARKINA, N.A., tekhnicheskii redaktor

[English-Russian agricultural dictionary] Anglo-russkii sel'sko-
khoziaistvennyi slovar'. Izd. 3-e, perer. Moskva, Gos. izd-vo
tekhniko-teoret. lit-ry, 1956. 532 p. (MLRA 9:8)

(English language--Dictionaries--Russian)
(Agriculture--Dictionaries)

38301 GEMKE, G. R.

Rezultaty lechebnogo primeneniya preparatov pustyarnika pri giperatsidnom
gastrite, yazvennoy bolezni sheludka i dvenadtsatiperstnoy kishki.
Zdravookhraneniye kazakhstana, 1949, No 6, s. 13-21

OMKE, G.R.

~~Treating~~
Treating gastritis in patients with silicosis. Zirav.Kazakh. 16
no.9:28-30 '56. (MLRA 10:1)

1. Iz terapevticheskogo otdeleniya (zav. - professor V.V.Gerbst)
Ust'-Kamenogorskoy oblastnoy ob'yedinennoy bol'nitsy.
(LUNGS--DUST DISEASES) (STOMACH--DISEASES)

GEMKE, G.H.

Possible genesis of bronchial asthma from lead poisoning. Dig.
truda i prof.zab. 3 no.4:47 J1-Ag '59. (MIRA 12:11)
(ASTHMA)
(LEAD POISONING)

GEMKE, G.R.

Functional state of the lymphatic vessels in saturnism. *Klin.*
med. 38 no.1:111-114 Ja '60. (MIRA 13:10)
(LEAD POISONING) (LYMPHATIC SYSTEM)

GEMINTERN, V.I.

Certain types of matrix rings. Sib. mat. zhur. 5 no. 2:310-31~
Mr-Ap '64. (MIRA 17:5)

KAYRAKBAYEV, M.K.; GEMKE, G.R.

Use of a paranephric novocaine block in lead colic. Trudy Inst.
kraev. pat. AN Kazakh SSR 9:110-114 '61. (MIRA 16:7)
(COLIC) (NOVOCAINE) (LEAD POISONING)

PALKIN, V.N.; GEMKE, G.R.

Diagnosis and treatment of eosinophilic pneumonia. Zdrav. Kazakh.
21 no.9:26-28 '61. (MIRA 14:10)

1. Iz Ust'-Kamenogorskogo klinicheskogo otdeleniya (zav. - kand.med.
nauk M.K.Kayrakbayev) Instituta krayevoy patologii AN Kazakhskoy
SSR.

(PNEUMONIA)

GEMKE, G.R. (Ugt.: Kamenogorsk)

Arterial tone as affected by lead. Gig. truda i prof. zab.
4 no. 2:49-53 F '60. (MIRA 15:3)

1. Vostochno-Kazakhstanskiy oblastnoy otdel zdraookhraneniya.
(BLOOD PRESSURE)
(LEAD--PHYSIOLOGICAL EFFECT)

GEMKE, G.R.; PALKIN, V.N. (Ust'-Kamenogorsk)

Hepato-bronchial fistulas. Vrach. delo no.6:90-9% Je '61.
(MIRA 15:1)

1. Vostochno-Kazakhstanskaya oblastnaya bol'nitsa.
(FISTULA) (LIVER_DISEASES) (BRONCHI_DISEASES)

GEMKE, G.R.

Disorders in the functional state of the lymphatic vessels in
lead poisoning. Trudy Inst.kraev.pat. AN Kazakh.SSR 10:132-
143 '62. (MIRA 16P5)
(LEAD POISONING) (LYMPHATICS--DISEASES)

GEMKE, G.R.

Disorders in the symmetry of arterial pressure in persons coming
in contact with lead. Trudy Inst.kraev.pat. AN Kazakh.SSR 10:144-
152 '62. (MIRA 16:5)
(LEAD POISONING) (BLOOD PRESSURE) (SYMMETRY (BIOLOGY))

CEMKE, G.R.; PAKHOTINA, N.S.

Case of poisoning with hydrogen sulfide in combination with
alcohol. Trudy Inst.kraev.pat. AN Kazakh.SSR 10:226-229 '62.

(MIRA 16:5)

(POISONING) (ALCOHOL—PHYSIOLOGICAL EFFECT)
(HYDROGEN SULFIDE—TOXICOLOGY)

GEMKE, G.R.; SADBENOVA, Sh.S.

Case of the formation of edemas in treating lead colic with
calcium disodium salt of EDTA. Trudy Inst.kraev.pat. AN
Kazakh. SSR 9:115-117'61. (MIRA 16:7)
(EDEMA) (LEAD POISONING) (ACETIC ACID)

GEMKE, Rudol'f Georgiyavich; RIVLIN, L.B., inzh.[deceased];
RIVLIN, L.B., red.; ZHITNIKOVA, O.S., tekhn. red.

[Faults in electrical machines] Neispravnosti elektriche-
skikh mashin. Izd.6., podgotovlennoe inzh. L.B.Rivlinym.
Moskva, Gosenergoizdat, 1963. 246 p. (MIRA 16:7)
(Electric machinery--Maintenance and repair)

GEMKE, R. G.

Disrepair in electric machines, Moskva, Gosenergizdat, 1950.

MAZURENKO, H.P.; GEMMA, O.I.

Effect of untreated *B.mesentericus* preparations on the growth of
tumors in mice. Vrach,delo supplement '57:99 (MIRA 11:3)

1. Laboratoriya bioterapii raka (zav.-H.P.Mazurenko) Kiyevskogo
instituta epidemiologii i mikrobiologii.
(BACILLUS MESPENTERICUS) (TUMORS)

GULYY, M.F.; MAZURENKO, M.P.; GONCHAROVSKAYA, T.S.; DAOTYAR', R.G.; GEMMA,
O.I.; SLYUSARENKO, I.T.; ZAKHAROV, A.V.

Preparation from the lytic substances of *Bacillus mesentericus* and
its action on ascitic cancer in mice. Vrach. delo no.12:1347 D '57.
(MIRA 11:2)

1. Laboratoriya bioterapii raka (zav. - kand.med.nauk M.P.Mazurenko)
Kiyevskogo instituta epidemiologii i mikrobiologii i otdel tkanevykh
belkov (zav. - chlen-korrespondent AN USSR, prof. M.F.Gulyy) Insti-
tuta biokhimi AN USSR.

(CANCER) (BACTERIA, ANEROBIC)

GEMMERLING, A. V.

Gemmerling, A. V. - "On the calculation of externally compressed thin-walled tubes",
Trudy Laboratorii stroit. mekhaniki (Tsentr. nauch.-issled. in-t prom. sooruzheniy),
Moscow, 1949, p. 104-29.

SO; U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

GEMMERLING, A.V., kandidat tekhnicheskikh nauk; TROFIMOV, V.I., kandidat
tekhnicheskikh nauk.

Testing a model of the framework of the building of the Palace
of Culture and Science in Warsaw. Stroi.prom.32 no.2:28-33 F '54.

(MLRA 7:2)

(Warsaw--Building, Iron and steel) (Building, Iron and steel--
Warsaw)

GEMMERLING, A.V., kandidat tekhnicheskikh nauk; TROFIMOV, V.I., kandidat tekhnicheskikh nauk; MILETKOVSKIY, I.Ye., kandidat tekhnicheskikh nauk; KOCHERGOVA, Ye.Ye., kandidat tekhnicheskikh nauk; BELYAYEV, B.I., laureat Stalinskoy premii, inzhener, redaktor; BOSTOVTSOVA, M.P., redaktor; MEDVEDEV, L.Ya., tekhnicheskiiy redaktor.

[Investigation of the work of framed structures] Issledovanie raboty ramnykh konstruksii. Moskva, 1955. 136 p. (Moscow. Tsentral'nyi nauchno-issledovatel'skii institut promyshlennykh sooruzhenii. Nauchnoe soobshchenie no.21). (MLRA 9:2)
(Structural frames)

124-57-1-940

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 130 (USSR)

AUTHOR: Gemmerling, A. V.

TITLE: The Carrying Ability of Steel Beams Subject to Pure Compression and to Combined Compression and Bending (Nesushchaya sposobnost' szhatykh i szhato-izognutykh stal'nykh sterzhney)

PERIODICAL: V sb.: Issledovaniye prochnosti, plastichnosti i polzuchesti stroit. materialov. Moscow, 1955, pp 35-99

ABSTRACT: Basic assumptions are stated for the calculation of certain problems relative to the stability in the elastic-plastic range of structural steel elements. An approximate formula is adduced for the critical load of an eccentrically compressed elastic cantilever beam having a square cross section; the deduction is made that all structural steel beams under compression, for all practical intents and purposes, lose their stability in the elastic-plastic range. The author reaches the conclusion that for steel beams having a three-flange cross section working in the elastic-plastic range, the magnitude of the critical force can be calculated from the Euler formula for beams of uniform cross section, but

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124-57-1-940

The Carrying Ability of Beams Subject to Pure Compression (cont.)

using the moment of inertia of the elastic nucleus; this affords a solution of the problem by means of its division into two parts - a linear and a non-linear part. It is indicated that such a treatment permits a ready and simple evaluation of the effects upon the stability of a structural member of such phenomena as plastic deformations, local losses of stability, incipient general and local distortions, etc. An analysis is also offered of the working of thin laminar steel construction elements in the elastic-plastic stage. From a number of experimental findings obtained at the TsNIIPS, the author states that such elements, within the range of normally employed ratios of dimensions, appear to be fully stable throughout the elastic and the elastic-plastic ranges. Results of a study of the character of the deformation of eccentrically compressed H-beams within the critical range are presented; the conditions in which the appearance of flexural-torsional instability cannot occur are presented.

N. S. Chausov

1. Beams--Stability--Theory
2. Beams--Stability--Mathematical analysis
3. Approximate computations--Applications

Card 2/2

SOV/124-57-9-11080

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 9, p 166 (USSR)

AUTHORS: Baldin, V. A., Gemmerling, A. V., Trofimov, V. I.

TITLE: Experimental Investigation of the Elastic-plastic Working of Low-carbon Steel Subject to Simple and Compound Loads (Eksperimental'noye issledovaniye uprugoplasticheskoy raboty malouglerodistoy stali pri prostom i slozhnom nagruzheniyakh)

PERIODICAL: V sb.: Issledovaniya po stal'nykh konstruktsiyam, Moscow, 1956, pp 33-58

ABSTRACT: Experimental investigations are made of the stress-strain relationship (initial strain of up to 20%) of mark St.0 and St.3 soft steel subjected to a plane stress condition (simple and compound loads). A special test installation is used for biaxial compression and biaxial compression-tension. Compression loads were applied by means of a flexible rack that minimized the effects of friction on the process of strain development. Strain was applied by means of a 100-ton jack along one axis and by means of a 300-ton universal load-testing machine along the other axis. Biaxial compression specimens consisted of plates measuring from 82x82 mm up to 83.5x83.5 mm with a thickness of from

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SOV/124-57-9-11080

Experimental Investigation of the Elastic-plastic Working of Low-carbon (cont.)

14.5 to 16 mm. Tension-compression tests were performed on strips measuring 800 mm with a 16x40 mm cross section. The authors came to the conclusion that for simple biaxial loads the yield point occurs between the conditions of Saint Venant and those of Hencky-Huber-Mises, but nearer to that of Saint Venant. It is noted that the possibility of constructing generalized stress-strain curves is qualitatively substantiated.

P. O. Pashkov

Card 2/2

SOV/124-57-7-8244

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 7, p 121 (USSR)

AUTHORS: Gemmerling, A. V., Klimov, N. I.

TITLE: Carrying Capacity of Centrally and Eccentrically Compressed Rods of NL2 Brand Steel (Nesushchaya sposobnost' tsentral'no i vnetsentrenno szhatykh sterzhney iz stali marki NL2)

PERIODICAL: V sb.: Issledovaniya po stal'nym konstruktsiyam. Moscow, 1956. pp 68-96

ABSTRACT: Studies are conducted on the stability of pin-jointed compressed prismatic rods of NL2 steel subjected to flexure in the plane of the applied forces which coincides with the plane of symmetry. The assumptions of Ježek (K. Ježek, Stahlbau, 1933) are adopted (conservation of the normals, idealized stress-strain diagram, sinusoidal semi-wave flexure pattern, and the substitution of the curvature by the second derivative). A cross section consisting of three rectangles is studied. Under unilateral yield the criterion of the loss of stability is expressed in the form of

$$\frac{dM}{da} = \frac{dM_e}{da} \quad (*)$$

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SOV/124-57-7-8244

Carrying Capacity of Centrally and Eccentrically Compressed Rods (cont.)

where M and M_e correspondingly are the internal and the external moments of forces in the central cross section respectively, and a is the cross-sectional depth of the elastic band. Under the given assumptions expression (*) is known to be equivalent to the condition of a stationary magnitude of the compression force (see RZhMekh, 1957, abstract 941). Tables are given for the values of $\phi = \sigma_{crit} / \sigma_t$ for a number of different types of cross sections. Test-result data are given for 14 types of wide-flange beams. Flexotorsional loss of stability was observed with an eccentric application of force to the plane of the web. The difference between the theoretical and the experimental results for the application of the eccentric force to the plane of least stiffness did not exceed 10%.

B. M. Broude

Card 2/2

SOV/124-58-1-1150

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 1, p 148 (USSR)

AUTHOR: Gemmerling, A. V.

TITLE: Influence of Various Supplementary Factors on the Bearing Capacity of Structural Steel Elements (Vliyaniye razlichnykh dopolnitel'nykh faktorov na nesushchuyu sposobnost' elementov stal'nykh konstruktsiy)

PERIODICAL: V sb. : Issledovaniya po stal'nyim konstruktsiyam. Moscow, 1956, pp 158-200

ABSTRACT: The author adduces the results of experimental investigations of elements of steel structures that deviate from the ideal calculation scheme, such as grid columns having eccentric joints between the cross stays and the longerons, segments of masts and cruciform columns with nonaligned butt joints, and wide-flange I beams. An analysis of the results shows the substantial dependence of the bearing capacity on the magnitude of the above-indicated imperfections.

S. N. Nikiforov

Card 1/1

CHMERLING, A.V., kand.tekhn.nauk, dots.; YEGOROVA, N.A., red.izd-va;
TOKER, A.M., tekhn.red.

[Supporting power of steel bar structures] Nesushchaya sposobnost'
stershnevyykh stal'nykh konstruktsii. Moskva, Gos. izd-vo lit-ry
po stroit., arkhit. i stroit. materialam, 1958. 215 p. (MIRA 11:4)
(Structural frames) (Building, Iron and steel)

GEMMERLING, A. V.: Doc Tech Sci (diss) -- "The bearing strength of steel rod structures". Moscow, 1959. 31 pp (Acad Construction and Architecture USSR), 150 copies (KL, No 17, 1959, 103)

GEMMERLIN(), A.V. (Moskva)

Stability of eccentrically loaded compressed rods in the elastic-plastic stage. Stroi.mekh. i rasch.soor. 1 no.2:1-8 '59.
(MIRA 12:4)

(Elastic rods and wires)

GEMMERLING, A.V. (Moskva)

Calculating the strength of compressed rods taking into
account the creep of materials. Stroi.mekh.1 rasch.soor. 1
no.5:19-20 '59. (MIRA 13:1)
(Creep of materials) (Elastic rods and wires)

Comme... 1966

Report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

- 64. A. A. Gerasimov (Moscow): On the stability of the equilibrium of a shell with the law of elastic-plastic creep.
- 65. A. I. Gerasimov, A. S. Gerasimov (Moscow): Solution of a problem of stability of a shell with the law of elastic-plastic creep.
- 66. A. I. Gerasimov (Moscow): An approximate stability analysis of a shell with the law of elastic-plastic creep.
- 67. A. I. Gerasimov (Moscow): Some problems concerning the plane flow of an elastic-plastic material.
- 68. A. I. Gerasimov (Moscow): A quasi problem for a shell with the law of elastic-plastic creep.
- 69. A. I. Gerasimov (Moscow): Some problems concerning the stability of a shell with the law of elastic-plastic creep.
- 70. A. I. Gerasimov, P. Gerasimov (Moscow): Simulation of processes of plastic deformation and rupture of shells with the law of elastic-plastic creep.
- 71. A. I. Gerasimov (Moscow): Development of a theory of rupture of shells with the law of elastic-plastic creep.
- 72. A. I. Gerasimov (Moscow): Some generalizations of the basic equations of viscoplasticity.
- 73. A. I. Gerasimov (Moscow): The propagation of longitudinal waves in a viscoplastic medium.
- 74. A. I. Gerasimov, P. Gerasimov (Moscow): Some problems concerning the stability of a shell with the law of elastic-plastic creep.
- 75. A. I. Gerasimov (Moscow): A generalized theory of plates with the law of elastic-plastic creep.
- 76. A. I. Gerasimov (Moscow): The theory of finite deformations of anisotropic elastic media.
- 77. A. I. Gerasimov, B. A. Rizalovskiy (Moscow): A general creep theory of shells.
- 78. A. I. Gerasimov (Moscow): Development of the theory of the stability of shells.
- 79. A. I. Gerasimov (Moscow): Approximate integration of the equations of the theory of thin elastic plates.
- 80. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 81. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 82. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 83. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 84. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 85. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 86. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 87. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 88. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 89. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 90. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 91. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 92. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 93. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 94. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 95. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 96. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 97. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 98. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 99. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.
- 100. A. I. Gerasimov (Moscow): Investigation of the stability of shells with the law of elastic-plastic creep.

GEMMELING, A.V. (Moskva)

Stability of prestressed beams. Stroi.mekh.1 rasch.
soor. 2 no.3:14-16 '60. (MIRA 13:6)
(Prestressed concrete) (Girders)

GEMERLING, A.V., doktor tekhn.nauk

Problems of the strength and stability of building structures.
Trudy TSNIISK no.7:6-32 '61. (MIRA 15:3)
(Theory of structures)

GEMMERLING, A.V., doktor tekhn.nauk; BEL'SKIY, G.Ye., kand.tekhn.nauk

Bearing capacity of frames under elastoplastic conditions.
Trudy TSNIISK no.7:33-62 '61. (MIRA 15:3)
(Structural frames--Testing)

GEMMERLING, A.V., doktor tekhn.nauk; OS'KIN, B.I., inzh.

Calculation of prestressed beams under elastoplastic conditions.
Trudy TSNIISK no.7:97-124 '61. (MIRA 15:3)
(Beams and girders)

GEMPERLING, A.V. (Moskva)

Compression testing of cylindrical shells. Stroimekh. i rasch.
soor. 5 no.2:19-23 '63. (MIRA 1616)
(Elastic plates and shells--Testing)

GEMMERLING, A.V. (Moskva)

Computers and the design of structures. Stroi. mekh. i rasch.
soor. 5 no.3:1-4 '63. (MIRA 16:6)

(Electronic digital computers)
(Structures, Theory of)

GEMMERLING, A.V., doktor tekhn. nauk, prof., red.; BALDIN, V.A.;
kand. tekhn. nauk, red.; ZHUKOVA, M.S., red.

[Prestressed steel and cable structures] Stal'nye pred-
varitel'nyye -napriazhenyye i trosovyye konstruksii. Moskva,
Stroizdat, 1964. 217 p. (MIRA 17:9)

1. Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut
stroitel'nykh konstruksiy.

GEMMERLING, G.; GLADKOVSKIY, T.

Slag-pumice concrete in panels of outer walls. Na stroi. Ros.
3 no.5:22-23 My '62. (MIRA 15:9)

1. Rukovoditel' laboratorii stroitel'nykh materialov Ural'skogo
filiala Akademii stroitel'stva i arkhitektury SSSR (for
Gemmerling). 2. Nachal'nik tsentral'noy stroitel'noy laboratorii
tresta Chelyabmetallurgstroy (for Gladkovskiy)
(Concrete walls)

19600

S/055/60/000/005/009/010
C111/C222

AUTHOR: Gemmerling, G.A.

TITLE: The Stability Beyond the Elastic Limit, of a Straight Centrally Compressed Bar of Linearly Consolidating Material

PERIODICAL: Vestnik ³⁰Moskovskogo universiteta. Seriya I, matematika, mekahnika, 1960, No.5, pp.68-72

TEXT: The author considers a vertical straight bar with a constant rectangular cross section which is tightly clamped at the lower end and free at the upper end. A central vertical load acts upon the bar where the tensions exceed the elastic limit. The bar is in the state of equilibrium. The author investigates the connection between the buckling load and the perturbations assumed to be one-parametric by which a bending of the bar to a parabola of second order is caused. It is stated that to different systems of perturbations there correspond different buckling loads. The dependence of the buckling load on the parameter of the perturbations is given.

There are 8 figures and 4 references: 3 Soviet and 1 American.

ASSOCIATION: Kafedra teorii plastichnosti (Chair of Theory of Plasticity)

SUBMITTED: November 25, 1959
Card 1/1

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C

ACCESSION NR: AF4018427

8/0178/64/000/001/0075/0078

AUTHOR: Gommarling, G. A. (Moscow)

TITLE: The effect of the loading path on the characteristic dimension of a plate along which the plate bulges

SOURCE: AN SSSR. Izv. Otd. tekhn. nauk. Mekhanika i mashinostroyeniya, no. 1, 1964, 75-78

TOPIC TAGS: bulging, strain, stress, stress analysis, bending, plate bulging, bulging deformation, nonelastic deformation, deformation

ABSTRACT: A discussion of the stability of a plate compressed beyond the limit of elasticity. The force of the bulging of the plate depends on the path of the loading up to the moment of loss of stability since deformations depend to a great extent on the loading path while the rigidity of the plate at bending may depend not only on stresses but also on deformations. The final stressed state is taken and a study is made of the relationship between the characteristic parameter of the plate along which the bulging takes place and the path of the change in the stresses up to their final values. It is assumed that there are no zones of loading in the plate at the moment of bulging. Orig. art. has: 20 formulas.

Card 1/4

ACCESSION NR: AP4022651

S/0207/64/000/001/0080/0084

AUTHOR: Gemmerling, G. A. (Moscow)

TITLE: On the plasticity postulate

SOURCE: Zhurnal priklad. mekhan. i tekhn. fiz., no. 1, 1964, 80-84

TOPIC TAGS: plasticity postulate, flow theory, stress function, stress deviator, Drucker postulate

ABSTRACT: The author studies a simplified model based on the second invariant of the stress deviator and treats the generalized Drucker postulate. Use of this postulate leads, in special cases, to an essential restriction on the admissible form of the stress function. He shows that all the basic results of flow theory are preserved under the obtained flow law. "The author thanks V. D. Klyushnikov under whose direct guidance this work was done." Orig. art. has: 41 formulas.

ASSOCIATION: none

SUBMITTED: 03May63

DATE ACQ: 08Apr64

ENCL: 00

SUB CODE: ME

NO REF SOV: 012

OTHER: 003

Card 1/1

SKRAMTAYEV, B.D., doktor tekhn.nauk, prof.; GEDDERLING, G.V., kand.geol.-
min.nauk; DOMNICH, A.I., aspirant

Coarse porous concrete made with waste blast-furnace slags. Bet.
i shel.-bet. no.10;439-442 O '60. (MIRA 13:10)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Skramtayev).
(Concrete) (Slag)

GEMMERLING, G.V., kand.geolog-mineralogicheskikh nauk; BOBROV, B.S., inzh.

Study of the hydration process of lime-ash binding materials
using artificial aluminum silicate glass. Stroi.mat. 8
no.3:30-32 Mr '62. (MIRA 15:8)
(Binding materials) (Aluminum silicates)

CHERNYY, A.S.; GEMMERLING, G.V.; GLANTS, A.I.

Slag pumice concrete is an effective material for the manufacture of exterior wall slabs. Stroi. mat. 9 no.4:19-22 Ap '63.

(MIRA 16:5)

1. Glavnyy inzhener tresta Chelyabmetallurgstroy (for Chernyy).
2. Ural'skiy filial Akademii stroitel'stva i arkhitektury SSSR (for Glants).

(Lightweight concrete) (Walls)

GEMMERLING, G.V.; GLANTS, A.I.

Monograph on the use of slag and ash cement. Stroi. mat. 10 no.11:
40 N '64. (MIRA 18:1)

1. Rukovoditel' laboratorii stroitel'nykh materialov Ural'skogo
nauchno-issledovatel'skogo instituta zhelezobetonnykh izdeliy,
stroitel'nykh i nerudnykh materialov (for Gemmerling).

GEMMERLING, V., kand. geol.-min. nauk, red.; GOLYSHEV, A.B.,
kand. tekhn. nauk, red.; CHURKIN, Yu.M., inzh., red.;
LIBENZON, I.R., red.

[Building materials and concrete] Stroitel'nye materialy
i betory. Cheliabinsk, 1964. 249 p. (MIRA 17:3)

1. Chelyabinsk. Ural'skiy gosudarstvennyy nauchno-
issledovatel'skiy institut sbornykh zhelezobetonnykh iz-
deliy i konstruktsiy.

MARCHENKO, A.A., laureat Leninskoy premii, red.; GIEMERLINGO, G.V.,
kand. geol.-miner. nauk, nauchn. red.

[Vermiculite; its properties, swelling technology, and
combined enclosing structures and elements] Vermikulit;
svoistva, tekhnologiya vspuchivaniia, kompleksnye og-
razhdaishchie konstruktsii i izdeliia. Moskva, Stroi-
izdat, 1965. 213 p. (MIRA 18:7)

cd

15

THE GENESIS OF THE SALTS OF THE STRIPES TYPE, V. V. COMMANDEUR, *Peдагогика* (U. S. S. R.) 21, 420-44 (1956).

Data are presented showing that the process of salt formation in the stripes goes in 3 stages with respect to the succession of cations: Na, Mg and Ca. The soil is at first affected by the Na ion, then by the Mg and finally by the Ca, at which stage it reaches maturity. The quantitative relations of Mg and Ca in the exchange complex of the stripes soils show that while in general the Mg accumulates in the B horizon in all of these soils, the tendency is toward a higher accumulation in the more arid regions, in the chestnut soils.

J. S. Joffe

ASO-51A DETAILING LITERATURE CLASSIFICATION

GEMMERLING, V.V.

A comparative characteristic of the organic matter of various soil types.
Uchenye Zapiski Moskov. Gosudarst. Univ. im. M.V. Lomonosova No.105, Pt. 2,
82-95 '46.
(CA 47 no.21:11629 '53)

GEMONOV, V.V., aspirant

Changes in the glycogen content within the epithelium of the mucous membrane of the oral cavity in the process of regeneration. Teor. i prak. stom. no.5:60-65 '61 (MIRA 16:12)

1. Kafedry gistologii (zav. - prof. L.I.Falin) Moskovskogo meditsinskogo stomatologicheskogo instituta.

GEMONOV, V.V., aspirant

Changes in the ribonucleic acid content in the regeneration of the mucous membrane of the oral cavity. Teor. i prak.stom. no.6:34-40 '63. (MIRA 18:3)

1. Iz kafedry gistologii (zav. - prof. I.I.Falin) Moskovskogo meditsinskogo stomatologicheskogo instituta.

GEMONOV, V.V.

First All-Russian Conference of Student Clubs at Stomatology
Departments of Medical Institutes. Stomatologiya 40 no.4:106-107
Jl-Ag '61. (MIRA 14:11)

(STOMATOLOGY--CONGRESSES)

TSAPKO, A.S., ~~oty.~~ red.; GLIKMAN, S.A., doktor khim. nauk, prof., red.;
GEMP, K.P., ~~st.~~ nauchn. sotr., red.; GRYUNER, V.S.,
doktor tekhn. nauk, red.; DANILOV, S.N., red.;
YEVTUSHENKO, V.A., kand. khim. nauk, red.; ZINOVA, A.D.,
kand. biol. nauk, red.; KIZEVETTER, I.V., doktor tekhn.
nauk, red.; KIREYEVA, M.S., kand. biol. nauk, red.;
VULIKHMAN, M.A., red.; POTEKHIN, L.P., red.

[Transactions of the First All-Union Conference of Workers
in the Algal Industry of the U.S.S.R.] Trudy Pervogo Vse-
soiuznogo nauchno-tekhnicheskogo soveshchaniya po vodo-
roslevnoi promyshlennosti SSSR. Arkhangel'sk, Arkhangel'skoe
knizhnoe izd-vo. Vol.1. 1962. 214 p. (MIRA 17:12)

1. Vsesoyuznoye soveshchaniye rabotnikov vodoroslevoy pro-
myshlennosti SSSR. 1st. 2. Chlen-korrespondent AN SSSR (for
Danilov). 3. Vsesoyuznyy nauchnyy institut morskogo rybnogo
khozyaystva i okeanografii (for Kireyeva). 4. Nachal'nik
Upravleniya rybnoy promyshlennosti Arkhangel'skogo sovnar-
khoza (for TSapko). 5. Saratovskiy gosudarstvennyy universiteta
im. N.G.Chernyshevskogo (for Glikman).

BEKIROVNIY, Nikolay Sergeevich; GEMP, Sergey Dmitriyevich; SHVARTS, Tamara Vasil'yevna; IONINA, I.N., vedushchiy red.; YASHCHURZHINSKAYA, A.B., tekhn.red.

[Deep faults in western Turkmenia and their role in the formation of oil pools] Glubinye razlomy Zapadnoi Turkmenii i ikh rol' v formirovani neftianykh zalezhei. Leningrad, Gostoptekhzdat, 1963. 104 p. (Leningrad. Vsesoiuznyi neftianoi nauchno-issledovatel'skii geologorazvedochnyi institut. Trudy, no.210). (MIRA 16:12)

BELYAYEV, S.S.; GEMPEL', A.R.

Improving the cutting disks for cutting joiner's pins. Suggested
by S.S. Belyayev, A.R. Gempel'. Rats. i izobr. predl. v stroi.
no. 13:115 '59. (MIRA 13:6)

1. Derevoobdelochnyy zavod No. 1 tresta Stroydetal' 82
Glavleningradstroya,
(Woodworking machinery)

GEMPEL', V. V.

Organization of Functions of Sectional Therapy

Sov. Zdravookhraneniye, 1949, No. 5, pp 35-37
LETOPIS 1949, item #33489